

IX. *A List of the Erotylid Coleoptera of Indo-China, with descriptions of new species.* By GILBERT J. ARROW, F.E.S., F.Z.S.

[Read June 1st, 1921.]

AMONGST the large collections of insects, chiefly from the banks of the Upper Mekong River, made in the course of the last few years by Mr. R. Vitalis de Salvaza, the Erotylidae are very numerous. The conspicuous colouring and habit of exposing themselves characteristic of the members of this family make them an especially easy prey to the collector, who is not, like other enemies, repelled by their unpalatable quality. Many species were taken in large numbers by Mr. Vitalis and, as a result of his exertions, the number of those recorded from Indo-China is now considerably more than doubled. Of the total number of 49 species now known from the region, only four or five of which were not found by him, no less than 23 are in my opinion new to science. The total number of species enumerated by Gorham in 1896 from the adjacent region of Burma was 33.

The bright black and red or yellow patterns so general in this group are liable to mislead if relied upon for the discrimination of the species, for series of specimens apparently identical in pattern, as well as in size and shape, may prove upon a microscopic examination to belong to many species and even genera. Standardisation in outward appearance has evidently been acquired, by reason of the advantage afforded by the readier recognition of their unpalatability by potential enemies. Deceived in this way, Mr. Gorham, in the paper just referred to, actually associated, under the name *Episcaphula elongata*, six different species, none of them really belonging to *Episcaphula elongata*. Two of the six are here described, as *Megalodacne major* and *affinis*.

PHONODACNE, new genus.

Moderately elongate, smooth and shining. Head with a pair of stridulatory files placed far back upon the vertex and normally concealed entirely within the cavity of the pronotum. Eyes moderately large. Antennae with the third joint markedly longer than the fourth and the club elongate and closely articulated. TRANS. ENT. SOC. LOND. 1921.—PARTS III, IV. (JAN. '22) U

Clypeus rather long, narrow in front. Mentum large, broad, hollowed beneath and obtusely angulate in front. Terminal joint of the labial palpi broad and securiform. Maxilla unarmed, densely hairy, with the inner lobe short, the outer lobe rather slender. Maxillary palpus with the last joint triangular, not enlarged nor transverse. Mandible sharply bidentate. Prosternum broadly produced behind. Legs strong, with the tibiae rather clavate, the three basal joints of the tarsi broadly lobed and the fourth minute.

♂. Front and hind tibiae strongly curved.

Type, *P. angusta*, sp. n.

This genus is nearly related to *Megalodacne*, from which it differs principally by the possession of a pair of stridulatory files upon the vertex of the head. These are placed so far back as to be visible only when the head is drawn a little out of its cavity, the files not extending forward as far as the hinder margin of the eye. The tarsi are very broadly dilated and the maxillary palpi have a securiform terminal joint, which is not enlarged nor distinctly transverse.

Episcapha stridulans Gorham is a second species of the genus, and another is *Megalodacne curripes* Fairmaire (Nyasaland). In the latter species, as in *P. angusta*, the stridulatory files are placed far apart, but in *P. stridulans* they are close together.

1. *Phonodacne angusta*, sp. n.

Nigra, nitida, singulo elytro lunula humerali ad basin attingenti, postice tridentata, fasciaque anteapicali intus abbreviata, pallide flavis, ornato; elongata, convexa, capite fortiter punctato, clypeo angustato, crebrius punctato, oculis mediocris, pronoto sat crebre punctato, marginibus lateralibus laevigatis, basi utrinque fortiter et profunde punctato, lateribus subtiliter arcuatis, antice leviter approximatis, angulis anticis acutis, posticis rectis; scutello lato; elytris subtiliter seriato-punctatis, postice laevigatis; prosterni dimidio antico crebre punctato, margine antico medio minute tuberculato:

♂, tibiis anticis et posticis arcuatis.

Long. 20 mm.; lat. max. 8 mm.

UPPER MEKONG: Pak Lay (Aug.), Ban Pan (May).

This is larger and more elongate than *P. stridulans*, with similar but rather reduced markings upon the elytra. The head and pronotum are rather closely punctured, the

former becoming gradually less so from front to rear. The stridulatory files are much farther apart than in the latter species. The pronotum is not much broader than it is long, gently narrowed to the front and smoother at the sides, with the lateral margins well marked, especially near the angles, which are sharp, the anterior ones produced. The elytra have rows of fine punctures, which vanish posteriorly. The prosternum is strongly and densely punctured in its anterior part and slightly carinate along the middle line, the carina terminating in a slight tubercle.

The male has the front and hind tibiae curved and serrated at the inner edge, the hind tibiae having the serrations very well marked and not close together.

2. *Megalodacne elongatula*, Crotch.

LAOS : Pak Lay (August).

This species is easily recognised by the two lines of close irregular punctures which divide the pronotum longitudinally. The male has a minute tuft of erect hairs near the end of the last ventral segment.

I may mention here that the Malaccan "*Triplatoma*" *varia* of Gorham belongs to the genus *Megalodacne*, Gorham having been deceived by the similarity of its markings to those of *T. gestroi* Bedel.

3. *Megalodacne vitalisi*, sp. n.

Nigra, modice nitida, singulo elytro fasciis duabus rufis ornato, antica obliqua, lunata, intra humerum ad basin attingenti (angulo humerali quidem nigro), postice medio dentata, fascia postica antepicali, transversa, antice tridentata, postice arcuata; angustissima, convexa, antice et postice attenuata, capite fortiter punctato, clypeo angusto, oculis prominentissimis, grosse granulatis; pronoto ubique sat fortiter punctato, quam longitudinem parum latiori, lateribus antice leviter arcuatis, angulis acute productis, postice fere rectis, parallelis, angulis rectis, basi medio lobato, depresso; scutello transverso; elytris distincte seriato-punctatis, interstitiis subtiliter punctulatis; prosterno fortiter haud crebre punctato, metasterni medio fere laevi, lateribus parce punctatis; antennis gracilibus, prothoracis basin transientibus, clava laxae articulationis.

Long. 6.5-9 mm.; lat. max. 2.5-3.5 mm.

UPPER MEKONG : Ban Nam Mo, Nam Mat, Pou Bia (Jan.-June), Luang Prabang.

Taken in great abundance.

It is a narrowly elongate insect, with the prothorax only a little broader than it is long, the elytra tapering and the upper surface rather strongly punctured, especially the head and pronotum. The elytra are ornamented with two red fasciae rather remote from one another, the anterior one extending in an oblique curve from the outer margin to near the suture and reaching the base just within the humeral angle, which is black, the posterior one scarcely interrupted at the suture, arched behind and produced in front into three points upon each elytron. The antennae are slender, extending backwards beyond the base of the pronotum, with a very loosely articulated club. The prosternum is rather strongly, but not closely, punctured and the metasternum is almost smooth in the middle and rather scantily punctured at the sides. This species is very close to *M. elongata* Guér., Java (wrongly attributed to Burma in Kuhn's catalogue), but of narrower form, more convex and less shining. The width of the prothorax is much less than half as much again as its length (that attributed by Lacordaire to Guérin's species). The pattern and the puncturation are almost identical with those of *M. elongata*.

4. *Megalodaene major*, sp. n.

Nigra, opaca, singulo elytro fasciis duabus rufis ornato, antica obliqua humerali, ad basin attingenti, postice tridentata, postica transversa subapicali, antice tridentata, postice arenata: anguste ovalis, convexa, capite crebre parum fortiter punctato, oculis grosse granulatis, pronoto subtiliter punctato, punctis nonnullis prope basin majoribus, leviter transverso, lateribus regulariter arenatis, antice convergentibus, angulis anticis acute productis, posticis rectis, basi fortiter lobato, scutello transverso, elytris subtiliter seriato-punctatis, interstitiis minutissime et parce punctulatis; corpore subtus magis nitido, grossius punctato.

Long. 8.5–11 mm.; lat. max. 3.5–4.5 mm.

UPPER MEKONG R.: Pou Bia, Nam Mat, Ban Nam Mo, Ban Thiou (Jan.–April), Luang Prabang. BURMA: Karen Hills (*L. Fea*, May).

This closely resembles *M. vitalisi* and the red elytral pattern is identical, except that the humeral lunule sends two extensions instead of one to the base of the elytron, leaving a small black dot between. It is a little larger, more oval in shape and rather more opaque above, the

puncturation being rather finer, except a few large punctures near the base of the pronotum. The puncturation of the elytral intervals is extremely minute, and the rows of punctures are generally less evident. The pronotum is very convex, about half as wide again as its length, with acutely produced front angles. The lower surface is much less strongly punctured than in either *M. vitalisi* or *affinis*, the sides of the prosternum alone being strongly punctured, the metasternum almost smooth and the abdomen shining but scantily punctured. The antennae are shorter than in *M. vitalisi*, not extending beyond the base of the pronotum, but the club is loosely articulated. Joints nine and ten are twice as broad as they are long.

5. *Megalodacne affinis*, sp. n.

Nigra, singulo elytro fasciis duabus rufis ornato, antica obliqua, bis ad basin attingenti, postice dentata, postica transversa, subapicali, antice et postice medio dentata; oblonga, modice elongata et convexa, capite et pronoto fortiter sat crebre punctatis, oculis prominentissimis, grosse granulatis, pronoto quam longitudinem fere duplo latiori, lateribus leviter arcuatis, angulis anticis fere rectis, posticis obtusis; scutello late transverso; elytris seriatopunctatis, interstitiis subtilissime punctulatis, prosterno fortiter haud crebre punctato, metasterno ubique, lateribus fortius, punctato; abdomine subtus sat fortiter et dense punctato; antennis modice elongatis.

Long. 6.5–8 mm.; lat. max. 2.5–3 mm.

UPPER MEKONG R.: Ban Nam Mo, Sala Pang Yok, Pou Bia, Pak Lay (Jan.–June), Luang Prabang, Vientiane. BURMA: Bhamo (*L. Foa*, June).

The red markings are practically the same as in *M. major*, except that the posterior band is not arched behind, but slightly toothed. *M. affinis* has a deceptive resemblance to *M. vitalisi*, and occurs in almost equal abundance in the same localities. It is of the same size and similarly punctured above, and the elytral pattern is the same, except that the anterior red band touches the base of the elytron at two points, with a small black dot between. It is less slender in shape, the prothorax more transverse, its sides more rounded, the front angles not acute and the hind angles rounded. The elytra are less attenuated behind. The antennae are less slender, not extending beyond the base of the pronotum, and the joints of the club are broader.

The lower surface is more strongly and closely punctured, the metasternum distinctly punctured in the middle.

6. *Megalodacne eximia*, sp. n.

Nigra, nitida, singulo elytro maculis rufis duabus subrotundatis ornato, prima posthumerali, leviter transversa, ad marginem externam attingenti, secunda antepicali; elongata, parum convexa, supra fortiter, capite sat crebre, punctata, oculis prominentissimis, pronoto paulo minus crebre et aequaliter punctato, quam latitudinem paulo breviori, lateribus parallelis, fere rectis, antice laevissime incurvatis, angulis anticis acutis, posticis rectis, basi transverse impresso, medio lato; scutello lato; elytris modice fortiter sciatopunctatis, interstitiis minute punctulatis; prosterno fortiter punctato, metasterno alique subtiliter et parce, alden inque subtus fortius et coarsius punctato; antennis gracilibus, articulis 2-8 elongatis, 9-11 laxo articulatis.

Long. 8 mm.; lat. max. 3 mm.

UHER MEKONG: Ban Thieu (March), Luang Prabang.

Only two specimens were taken.

This also resembles *M. vitalisi*, but is much less nearly related to it. The red marks are of more regularly rounded shape, the upper surface is more shining and less convex, the punctures larger and the sides less curved. The prothorax is little shorter than it is wide, its sides nearly straight and parallel, except in front, where they are lightly curved, with acute front angles. The prosternum is strongly punctured, closely at the sides and rather scantily in the middle, the metasternum finely and thinly punctured all over, and the abdomen distinctly but not closely punctured except upon the terminal segment. The tibiae are rather shorter and flatter than in the three species just described, and the antennae longer, but with a similar loosely-articulated club.

7. *Megalodacne hislopi* Crotch.

LAOS: Xieng Khouang (April).

A wide-ranging insect found in many parts of India, the Philippine Islands, etc.

8. *Episcapha 4-maculata* Wied.

LAOS: Vientiane, Charao, etc.

This is found in profusion in Indo-China, as in all parts of the Indo-Malayan Region.

9. *E. taishoensis* Lewis.

LAOS : Luang Prabang, Xieng Khouang (March-May).
TONKIN (June).

A species only recorded hitherto from Japan.

10. *E. indica* Crotch.

LAOS : Luang Prabang, Xieng Khouang, Pou Bia
(Jan.-June). TONKIN : Chapa (June). BURMA. ASSAM.
SIKKIM.

The pale yellow markings are a little narrower than in Indian specimens, and the humeral spot is a little larger in consequence, but I have found no more important difference. It is this form which has been described as *E. chapuisi*, Dohrn.

11. *E. psiloides* Bedel.

TONKIN : Than Moi (June, July).

Easily recognisable by its conspicuous hairy clothing and pale markings.

12. *E. curvicerus* Bedel.

TONKIN.

I have not seen this species.

13. *Episcapha ambigua*, sp. n.

Nigra, haud nitida, singulo elytro fasciis duabus angustis pallide flavis ornato, antica post humerum posita, ad marginem externam fere attingenti, et ad marginem basalem connexa, postica antepicali arcuata, antice quadri-, postice tri-dentata; elongato-ovalis, supra nuda, pedibus antennisque gracilibus, capite et pronoto grosse sat crebre punctatis, hujus lateribus bene arcuatis, marginibus sat latis, ante medium minute incrassatis; elytris coriaceis, fere opacis, convexis, lateribus bene arcuatis; corpore subtus crebre et minute punctato, vix perspicue pubescenti; antennarum articulis 2-9 elongatis, tertio quam quarto haud longiori.

Long. 16 mm.; lat. max. 6.5 mm.

LAOS : Luang Prabang, Sala Pang Yok (March).

A single specimen only.

Although the pattern is almost identical with that of *E. indica*, this is a peculiar and isolated species which, by the curvature of the sides of the prothorax and elytra, shows an approach to *Triplatoma*, *Trichulus*, etc. The eyes are larger than in that group of genera, and, with the short third antennal joint, determine the true relationship

of the species. The upper surface is devoid of hair, but not at all shining, the head and pronotum being strongly punctured and the elytra of a leathery texture and almost opaque. The legs and antennae are slender, all but the first and the last two joints of the latter being markedly elongate, but the third barely as long as the fourth. The eyes are divided by an interval equal to twice their radius. The pronotum has a rather broad elevated margin with a small lateral pore close to each extremity and another situated in a slight thickening a little before the middle.

14. *Nesitis ulyssis* Bedel.

TONKIN (June).

15. *Nesitis nigricollis* Bedel.

I do not know this species, recently described by M. Bedel with the last-mentioned one.

16. *Encaustes gigantea* Boh.

LAOS : Xieng Khouang, Pou Bia (Nov., Jan.).

Also found in Assam.

17. *E. malayana* Guér.

LAOS : Luang Prabang. UPPER MEKONG R. : Ban Nam Mo, Muong Sai, Vien Poukha (March-May).

This is a smaller form than the last, with less straight sides to the prothorax and the small black dots upon the elytra united at the base.

18. *E. flavofasciata* Kuhnt.

TONKIN.

Unknown to me.

19. *E. cruenta* Mael. var. *montana* Schenkl.

UPPER MEKONG R. : Pou Bia, Nam Mat, Vien Poukha, Tong King, etc. (Nov., Jan., April, May).

Herr Schenkling's note on *E. cruenta* Mael., the type of which is in the British Museum, shows that he has mistaken *E. marginalis* Crotch for that species.

20. *Encaustes laticollis*, sp. n.

Nigra, laevissima, pronoti annulis duabus medio conjunctis, utrinque ramis tribus emittentibus, elytrorum humeris rufomaculatis, callo extremo nigro lunulaque anteapicali ornata; elongata, capite haud fortiter punctato, pronoto lato, vix perspicue punctato, prope

basin utrinque impresso, puncto minuto profundo signato, margine antico leviter arcuato, utrinque paulo impresso, angulis anticis rotundatis, lateribus fere rectis et parallelis, angulis posticis vix obtusis; scutello latissimo; elytris longis, subtiliter striatopunctatis, apicibus rotundatis, haud truncatis:

♂, pedum anticorum femoribus arcuatis, tibiis intus lamina obtusa prope medium instructa.

Long. 18-24.5 mm.; lat. max. 7-9 mm.

UPPER MEKONG R.: Pou Bia, Pak Ho, Kok Ya (Oct., Jan.).

This is very nearly allied to *E. birmanica* Gorh. and *praenobilis* Lewis (Japan). Its red and black markings are almost those of the latter, but the red shoulder-mark has a black spot upon the summit of the callus and the apical mark has an arched hinder edge. In addition, the upper surface is a little less glossy and the pronotum is without the strong punctures at the sides and base. It is still more closely related to *E. birmanica* (which, however, has the elytra entirely black), but the forelegs of the male are different from those of both the other species, being less slender and bearing a long carina, instead of a tooth, at the inner edge. Of *E. birmanica* (male), Gorham says: "anterior femora armed with an acute tooth a little before the middle and an obtuse one near the base," and, comparing it with *E. praenobilis*, "in the male the tooth on the inner side of the front femora is quite differently situated." This is an error, for, although the femora have a prominence at the extremity, it is the tibia and not the femur which he is describing.

21. *Micrencaustes dehaani* Cast.

LAOS: Luang Prabang, Xieng Khouang (April, May).

A species ranging from Assam to Java.

22. *M. atropos* Kuhnt.

Unknown to me.

23. *M. liturata* Mael. (and var. *nigripennis* Kuhnt).

LAOS: Luang Prabang, Xieng Khouang, Vien Vai, Ban Sai (Sept., Nov., March-May).

This was found in great abundance. The red apical mark is generally, although not always, absent in these specimens.

24. *Micrencaustes apicalis*, sp. n.

Nigra, pronoto rufo, margine irregulari punctisque duobus discoidalibus nigris exceptis, elytrorumque macula subapicali antice bisinuata rufa; elongato-ovata, convexa, capite sat magno, haud dense punctato, oculis magnis, remotis, pronoto convexo, parce subtilissime punctulato, lateribus arcuatis, antice et postice contractis, basi fortiter trisinuato, utrinque area triangulari profunde punctata signato; scutello lato; elytris distincte lineato-punctatis; tibiis intermediis apice extus acute spinosis.

Long. 13-17 mm.; lat. max. 5.5-7 mm.

UPPER MEKONG R. : Ban Thiou, Sala Pang Yok (March), Nam Mat (April), Luang Prabang.

One of the group of species with the apex of the middle tibia acutely produced.

The pronotum is convex and very smooth, scarcely broader behind than in front, its sides evenly rounded, the base having on each side a strongly punctured area of triangular shape extending to about one-third the length of the pronotum. The prosternum is not very sharply pointed in front, and the mesosternum is transversely rectangular, with an impressed stria, nearly straight in front and at the sides.

This species has the closest resemblance to *M. liturata*, but in addition to the presence of a red apical spot upon the elytra (not a sublateral stripe, as in *M. liturata*) and the fusion of the two red marks upon the pronotum, the head is rather larger, the eyes larger and rather farther apart, the prothorax more shining and convex, its sides more strongly rounded, the microscopic puncturation sparser, and the large punctures on each side of the base extend a little farther forward. The lines of punctures upon the elytra are rather less fine and close.

25. *Micrencaustes elongata*, sp. n.

Nigra, parum nitida, singulo elytro maculis duabus rufis ornato, lunula humerali intus late haud longe producta ad basin atque marginem lateralem attingenti lunulaque antepicali fere ad margines internam et externam attingenti; angusta, parum convexa, capite crebre punctato, pronoto ubique subtiliter sed distincte punctato, utrinque ad basin fortiter et copiose punctato, lateribus vix arenatis, antice convergentibus, angulis anticis acutis, posticis fere rectis; scutello transverso; elytris discreto seriato-punctatis; tibiarum

intermediarum apice extus spinoso; abdominis apice subtus punctis magnis profundis marginato.

Long. 14.5-18 mm.; lat. max. 6-7 mm.

UPPER MEKONG: Ban Nam Mo (March, April), Ban Thiou (March), Luang Prabang.

The Museum contains a specimen taken by Boden Kloss at Korinchi, Sumatra, which appears identical with those taken by Mr. Vitalis.

It is a long and rather narrow species, not very convex nor very shining. The head and prothorax are rather small relatively, and rather closely punctured, the former strongly, the latter finely in the middle but fairly strongly at the sides, with a cluster of large punctures on each side of the base. The rows of punctures upon the elytra are well marked. A peculiar and distinctive feature is a row of ten or twelve large deep punctures occupying the hind margin of the last ventral segment. The middle tibiae are acutely spinose at the end. The clypeus is short, the eyes large and separated by little more than the diameter of one of them.

It has a deceptive resemblance to *Megalodacne elongatula* Crotch.

26. *Micrencaustes siamensis*, sp. n.

Nigra, subopaca, singulo elytro maculis duabus fulvis ornato, lunula humerali ad basin attingenti, postice bis dentata, fasciaque anteaicali antice tri-, postice bi-dentata, fere ad marginem externam attingenti; elongato-ovalis, modice convexa, capite distincte, clypeo fortius punctato, pronoto subtiliter punctato, lateribus bene marginatis, leviter arcuatis, angulis anticis acutis, posticis fere rectis; scutello transverso; elytris subtiliter lineato-punctatis; tibiis intermediis apice haud spinosis.

Long. 14-17.5 mm.; lat. max. 6.5-7.5 mm.

SIAM; LAOS: Xieng Khouang.

This species and *M. convexa* are closely related to *M. lunulata* MacL., which they resemble in their form and markings, differing in the absence of markings upon the thorax. In addition *M. siamensis* is larger and more elongate, the upper surface is less shining than in *M. lunulata*, and the puncturation of the head and pronotum is a little stronger. As in *M. lunulata*, the middle tibiae are not acutely produced at the end.

27. *Micrencaustes convexa*, sp. n.

Nigra, nitida, singulo elytro maculis duabus fulvis ornato, lunula humerali ad basin producta et postice bis dentata fasciaque antepicali antice tridentata fere ad marginem externam attingenti; elongato-ovalis, convexa, capite bene punctato, clypeo rugose; pronoto minute sed distincte punctato, lateribus bene marginatis, leviter arcuatis, angulis anticis acutis, posticis fere rectis; scutello transverso; elytris sat discrete seriato-punctatis; tibiarum intermediarum apice haud spinoso.

Long. 14 mm.; lat. max. 6 mm.

UPPER MEKONG R. : Ban Pan, Nam Tiene (April, May).

Very closely related to *M. siamensis*. As in that species the middle tibiae are not spinose at the end. It is a little shorter, more convex and more shining than *M. siamensis*, with slightly more distinct punctures, those upon the elytra especially being larger and farther apart. The orange markings are almost identical, but the humeral mark does not extend quite so far from the basal margin.

28. *Micrencaustes planicollis*, sp. n.

Nigra, haud nitida, elytris flavo-bifasciatis, fascia antica basali calum humeralem punctosque duos minutos nigros amplectente, postice oblique quadri-emarginata, fasciaque antepicali transversa, angusta, antice et postice bi-emarginata; elongata, angusta, oculis magnis, clypeo parvo, fortiter et crebre punctato, fronte subtilius punctata; pronoto sat plano, ubique minute punctato, lateribus fere rectis, antice paulo contractis, angulis anticis acutis, posticis rectis; scutello subrotundato, minutissime punctulato; elytris minutissime seriato-punctatis; prosterno antice acute producto, mesosterno linea trapeziformi circumdato; tibiarum intermediarum apice spinoso.

Long. 15 mm.; lat. max. 6 mm.

LAOS : Xieng Khouang (April).

A rather narrowly elongate species with pale yellow transverse bands upon the elytra, of which the first reaches the base, partially surrounds the shoulder spot and includes two smaller black spots placed transversely, and the posterior one is narrow, transverse and tridentate both in front and behind. The upper surface is rather opaque, the pronotum especially. The sides of the latter are nearly straight and parallel, except in front where they are gently curved. The shape of the scutellum of the unique specimen is peculiar, the margin being almost uniformly rounded except for the basal emargination.

29. *Micrencaustes navicularis*, sp. n.

Nigra, nitida, singulo elytro fascia transversa anteapicali rufa ornato, fascia haud arcuata, antice et postice acute dentata, ad marginem internam et externam haud attingenti; modice elongata, nitida, capite parvo, clypeo angusto, fortiter crebre punctato, fronte minutius et parcius punctata; pronoto ubique minute sed distincte punctato, lateribus leviter arcuatis, antice convergentibus, angulis anticis acutis, posticis rectis; scutello brevissimo sed postice angulato; elytris distincte sat laxe seriato-punctatis, postice attenuatis; prosterno valde acuminato, mesosterno linea semicirculari impresso, tibiis apice haud spinosis.

Long. 13.5–15 mm.; lat. max. 6–6.5 mm.

LAOS : Pou Bia (Jan.).

This is another species of the group in which the middle tibiae are not spinose at the end. It is the only species of the genus known to me of which the pattern consists of a red posterior band only. This band is exactly transverse, interrupted at the suture, and has a triple emargination of its front edge and a double emargination of its hind edge upon each elytron. The insect is only of moderate length, but tapers rather more markedly than usual both before and behind. The elytral striae are distinctly but not closely punctured. The mesosternum bears an impressed semicircular stria.

30. *Aulacochilus quadripustulatus* F.

TONKIN : Hoabinh (Aug.). LAOS : Luang Prabang (Nov.).

31. *A. episcaphoides* Gorh.

LAOS : Luang Prabang, Pou Bia (Dec., Jan.).

A common species in Assam and Burma.

32. *A. luniferus* Guér.

LAOS : Luang Prabang, Ban Nong, Muong Sai, Pou Bia (Dec., Jan., Mar.).

33. *Aulacochilus sternalis*, sp. n.

Cyaneo-niger, haud nitidus, elytris fascia lata rufa basali, utrinque puncta dua nigra (quorum majore humerali ad marginem conjuncto) includente, fasciaque angustiori postmediana valde sinuata ornatis, fasciis vix ad latera attingentibus, antica ad suturam interrupta, postica fere integra; oblongo-ovatus, con-

vexus, capite pronotoque ubique fortiter punctatis, hoc parum convexo, lateraliter paulo excavato, marginibus bene elevatis, elytris punctato-striatis, interstitiis subtiliter punctulatis; prosterno antice producto, acuminato, striis lateralibus antice abbreviatis, mesosterno brevissimo, linea arcuata transversa inciso, metasterno fortiter punctato, segmento ventrali basali utrinque linea brevi inciso.

Long. 7.5–9 mm.; lat. max. 3.5–4.5 mm.

LAOS: Luang Prabang (March, April).

This closely resembles *A. luniferus* Guér. It is a little larger, with the juxta-scutellar spot detached, the humeral one united to the lateral border but not elongate, and an additional postmedian red fascia, which reaches the sutural margin and almost attains the external margin. The prosternum is sharply produced in front, the mesosternum is very short and transverse and has a complete semicircular stria, the prosternum is coarsely punctured at the sides, the metasternum strongly and evenly punctured everywhere, the abdomen closely punctured, the basal segment with short straight coxal lines. The pronotum is flattened at the sides, strongly punctured, with sharply raised lateral margins.

34. *Aulacochilus laoticus*, sp. n.

Niger, singulo elytro fascia posthumerali suberuciformi fere ad marginem anticam attingenti et infra humerum paulo producto fasciaeque anteapicali minore transversa medio constricta rufis ornato; oblongo-ovatus, convexus, haud nitidus, capite pronotoque ubique fortiter punctatis, hoc convexo, marginibus lateralibus bene elevatis, angulis obtusis, elytris striatopunctatis, interstitiis subtiliter punctulatis; prosterno haud producto aut elevato, stria integra antice et lateraliter inciso, mesosterno brevi, stria arcuata impresso, metasterni medio modice punctato, abdominis segmento basali linea longa angulata versus latera producta utrinque inciso.

Long. 8.5–9 mm.; lat. max. 4 mm.

LAOS: Xieng Khouang (April), Luang Prabang. Ban Nam Mo (April).

Closely related to *A. sternalis*. The ground-colour is black without blue tinge, the juxta-scutellar black spot is united with the sutural border, and the anteapical red patch is placed farther back and is very short. The pronotum is more convex, the prosternum has no process in

front but is rounded and has a marginal stria, complete except at the hind margin, the mesosternum is very short and has a semicircular stria, the metasternum is finely punctured, the abdomen closely punctured, and the coxal lines of the basal segment are long and continued parallel to the hind margin almost to the sides of the abdomen.

35. *Aulacochilus fraterculus*, sp. n.

Niger, singulo elytro fascia lata basali aliaque anteapicali parva arcuata fulvis ornato, fascia basali maculas 4 minutas includenti, quarum duabus internalibus, tertia humerali ad basin, quarta ad marginem externam sitis; oblongo-ovatus, convexus, haud nitidus, capite fortiter, pronoto subtilius punctato, hujus marginibus lateralibus bene elevatis, leviter arcuatis; elytris minute striato-punctatis, interstitiis subtilissime punctulatis; prosterno haud acuminato aut elevato, utrinque stria brevi inciso, mesosterno sat brevi, utrinque brevissime striato, metasterno abdomineque subtiliter punctulatis, hujus segmento primo ventrali utrinque linea arcuata fere ad marginem posticam attingenti inciso.

Long. 6.5—8 mm.; lat. max. 3.5—4.5 mm.

UPPER MEKONG R. : Ban Pan (May), Tong Lap (April), Pou Bia (Jan.), Luang Prabang (April).

This closely resembles *A. vitalisi* Arrow and *episcaphoides* Gorh., but is smaller and a little more elongate than the former and a little less so than the latter. The pattern is almost that of *A. episcaphoides*, but the ground-colour is black without blue tinge, the outlines are less sharply defined and the apical patch is produced backwards externally almost to the apices of the elytra. The prosternum is scarcely elevated in front, and not at all sharply pointed. It is longitudinally impressed and bordered by long striae which converge without meeting. The coxal lines of the first ventral segment are continued almost to the hind margin of the segment, where they are sinuous.

36. *Aulacochilus vitalisi*, sp. n.

Niger, parum nitidus, elytris fulvis, singulo marginibus suturali et externali, maculis duabus basalibus, duabus antemedianis (quarum interiori cum marginem suturalem plus minusve confusa), fascia postmediana extus dilatata ad margines internam et externam attingenti guttaque apicali cum margine conjuncta ornato; ovalis, convexus, pronoto paulo deplanato, irregulariter sat fortiter punc-

tato, marginibus lateralibus bene elevatis, elytris distincte striato-punctatis, lateribus reflexis; prosterno haud acuminato, utrinque inter coxas stria inciso, mesosterno etiam utrinque stria arcuata inciso, metasterni medio fortiter punctato, linea longitudinali impresso, abdominis segmento ventrali basali utrinque stria sat brevi obliqua inciso.

Long. 7.5—10.5 mm.; lat. max. 4.5—5.5 mm.

UPPER MEKONG R.: Pou Bia (Jan.).

This is extremely similar to *A. javanus* Guér. and of the same size and shape. The pattern is the same, but the elytral spot adjoining the scutellum is placed a little farther away, so that it is quite separated from the sutural line, and the postmedian black band is not completely detached from the lateral black border as in *A. javanus*. The lateral striae of the mesosternum are longer than in the latter, but the coxal lines of the first ventral segment are shorter, not bending round parallel to the hind margin as in that species.

37. *Aulacochilus janthinus* Lacord.

LAOS: Luang Prabang, Vien Poukha, Sala Pang Yok (March, April, May). INDIA. MALAYAN REGION.

I am unable to distinguish *A. sericeus* Bedel from this very common and widely-distributed species.

38. *Amblyopus vittatus* Oliv.

TONKIN: Hoabinh (Aug.).

This is also very abundant and widespread in the Oriental region.

Genus TRITOMA.

The species of this genus are extremely numerous and of practically world-wide distribution. In the recent catalogue of Kuhn they are scattered under various generic names. It appears to me impossible to separate the genus *Triplax*, the difference being one of superficial form only, a feature which is subject to almost infinite variation. The genus *Tritoma* was created by Fabricius in 1775 for *T. bipustulata* and other species. On the ground that Fabricius' genus was not that of Geoffroy, Crotch in 1872 renamed it *Cyrtotriplax*, designating *T. bipustulata* as the type. In 1873 he named an American species (*humeralis* F.) as the type: but since Geoffroy's names (not being uniformly binomial) are not now accepted,

Cyrtotriplax becomes a synonym of *Tritoma* F. In his subsequent "Revision" (1876) Crotch reverted to the European *T. bipustulata* F., but Kuhnt's Catalogue, attributing the name *Cyrtotriplax* to Gorham, adopts the latter's extraordinary proposal to use Crotch's name for Oriental species only. Another genus, *Pseudotritoma*, was made by Gorham in 1888 for Oriental species mistakenly referred to *Tritomidea* Mots. (a synonym of *Euxestus*) by Crotch, but without any attempt to differentiate it from *Tritoma*. Two species (*atripennis* and *xanthosticta* Gorh.) remain in the catalogue under *Tritomidea*, to which they are not related. Another series of species was separated by Gorham as *Triplacidea*. His genus *Phoxogenys*, the affinities of which he failed to elucidate, is scarcely distinguishable from *Cyrtomorphus*, as at present understood.

39. *Tritoma bella* Kuhnt.

LAOS : Vien Poukha (May). TONKIN (Kuhnt).

Determination of this is quite uncertain, for Kuhnt's few words do not really amount to a description.

40. *T. basimaculata* Kuhnt.

Unknown to me.

41. *T. nigripennis* Mots.

This is very probably the Burmese species named *Cyrtotriplax cebana* by Gorham, and nothing is given in the fragmentary description of *T. atripennis* Kuhnt by which that can be distinguished from *T. cebana*, except rather smaller size, to which no particular importance need be attached, but Kuhnt's name in any case is invalid, having been previously used by Gorham.

TONKIN (Kuhnt).

42. *T. oppositipunctata* Gorh.

Kuhnt has recorded this from Tonkin, but it is possible his insect is a form of *T. vitticollis*, mentioned later.

43. *Tritoma vitticollis*, sp. n.

Nigra, pronoti lateribus late, prothorace et abdomine subtus, antennarumque articulis 2, 3 et 4 flavibus, clytris plerumque leviter aeneis; oblongo-ovata, nitida, capite sat fortiter punctato, clypeo margine recto, oculis haud parvis, prominentissimis, pronoto medio distincte, lateraliter subtilius, punctato, marginibus lateralibus

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leviter arcuatis, angulis anticis paulo productis, haud acutis, posticis fere rectis, basi medio leviter lobato; scutello transverso, parce punctulato; elytris punctato-striatis, stria suturali indistincta, metasterno medio minute et parce, lateraliter fortius punctato, antennarum articulo tertio quam quarto paulo longiori, clava laxè articulata, angusta.

Long. 4—6 mm.; lat. max. 2.3—3.3 mm.

UPPER MEKONG R.: between Luang Prabang and Vientiane.

Black, with the pronotum (except a broad median black stripe), the prosternum and abdomen beneath and joints two to four of the antennae pale yellow.

A very abundant insect, varying considerably in size. In some specimens the interruption of the black longitudinal thoracic stripe produces a pattern like that of *T. ("Cyrtotriplax") oppositipunctata* Gorrh. and *T. motschulskyi* Bedel, but the yellow colour of the present species is much paler, and the legs and the mesosternum and metasternum are quite black. It is also generally larger, of less regularly oval shape than *T. motschulskyi*, and more strongly punctured both above and beneath than *T. oppositipunctata*.

The elytra have usually a slight brassy lustre. The antennae are moderately long, the third joint rather longer than the fourth, and the club long, narrow and loosely jointed. The punctures of the pronotum are finer at the sides than in the middle, and the lateral margins are more curved than in the other species here described.

44. *Tritoma atriceps*, sp. n.

Pallide flava, capite, elytris, meso- et metasterno antennarumque articulis 9 et 10 nigris, pronoti marginibus antica et postica medio plus minusve infuscat; ovalis, nitida, convexa, capite aequaliter sat fortiter et crebre, pronoto paulo subtilius, punctato, clypeo antice leviter emarginato, pronoti lateribus subtilissime arcuatis, angulis anticis vix acutis, posticis rectis; elytris striato-punctatis, stria suturali antice valde oblique ad basin protracta, interstitiis sat parce punctatis, metasterni medio subtiliter et parce, lateribus fortius punctatis; antennis brevibus, articulo tertio ad duos sequentes conjunctim fere aequali, tribus ultimis transversis, parum compactis.

Long. 3.5—4 mm.; lat. max. 2—2.5 mm.

UPPER MEKONG R.: between Luang Prabang and Vientiane.

T. atripennis Kuhnt, which, so far as the fragmentary descriptions indicate, appears not to differ from *T. nigripennis* Mots., has only the elytra and scutellum black, whereas in this species the head, scutellum, elytra, mesosternum and metasternum and the two penultimate joints of the antenna are black and the rest of the body pale yellow (not orange). There is also generally a very narrow and inconspicuous dark marginal line at the middle of the front and hind edges of the pronotum.

The first elytral stria is distinct, strongly oblique anteriorly and running close to the suture behind. The metasternum is very feebly punctured in the middle, more strongly at the sides. The club of the antenna is moderately broad but not closely-jointed.

45. *Tritoma repetita*, sp. n.

Fulva, oculis, pronoti punctis duobus medianis, uno ad marginem anticam, altero ad marginem posticam, elytrisque nigris; lato ovalis, nitida, convexa, capite et pronoto aequaliter et fortiter punctatis, clypeo bene emarginato, pronoti lateribus leviter arcuatis, angulis anticis acutis, posticis rectis, basi medio lobato; elytris striato-punctatis, interstitiis subtiliter punctatis, spatio suturali antice lato fortius punctato; metasterni medio crebre, lateribus parcius punctatis; antennis brevibus, articulo tertio ad duos sequentes conjunctim fere aequali, tribus ultimis modice compactis.

Long. 4.5 mm.; lat. max. 3 mm.

TONKIN: Hoabinh (Aug.).

It is possible that *T. atripennis* Kuhnt is a phase of this species without the two marginal black spots upon the pronotum. This is happily immaterial, since the name *atripennis* falls, having been previously used for a closely-related species by Gorham, but entirely misplaced by him, *Tritomidea*, as I pointed out in 1917, being synonymous with *Euxestus*. *T. repetita* is entirely orange-red in colour, with the exception of the eyes, a spot in the middle of the front margin of the pronotum, a corresponding spot at the hind margin and the elytra. This pattern like others is recurrent in this genus, most of the species of which seem to be rather localised, but the very similar *T. motschulskyi* Bedel and *T. oppositipunctata* Gorh. have

the head and part of the lower surface black. It is of broadly oval form and well punctured above and beneath. There is a rather wide and closely-punctured space on each side of the elytral suture, the first stria being practically obliterated. The metasternum is closely punctured in the middle and much less closely at the sides. The club of the antenna is rather long and compactly jointed.

46. *Tritoma alternata*, sp. n.

Nigra, capite (oculis exceptis), prothorace, elytrorum fascia lata mediana communi, pedibus antennisque (clava fusca excepta) pallide flavis; oblonga, modice angusta, convexa, nitida, capite et pronoto fortiter punctatis, hoc medio paulo subtilius, oculis parum parvis, clypeo antice leviter emarginato; prothoracis marginibus lateralibus subtiliter arcuatis, angulis omnibus obtuse rectis, basi haud valde lobato; scutello vix transverso; elytris distincte lineato-punctatis, interstitiis irregulariter et parcius punctatis; prosterno fortiter punctato, metasterno minus fortiter, medio parce punctato; antennis gracilibus, clava laxè articulata.

Long. 4—5.5 mm.; lat. max. 2 mm.

LAOS: between Luang Prabang and Vientiane.

This has the narrow form which serves as practically the only distinguishing feature of the genus *Triplax*, but, as the proportions vary with every species, it is not possible to find any natural dividing line in this respect. The coloration is peculiar. The head, prothorax, a broad transverse band crossing the middle of the elytra from side to side, the antennae (except the club), the legs and the prosternum and mesosternum are pale yellow, the remaining surface black. The antennae are rather long and slender, with a narrow loosely-jointed club, and the tibiae are not very broad. The puncturation of the head and pronotum is strong and the elytra have well-marked rows of punctures, between which are incomplete rows of similar punctures.

47. *Tritoma solitaria*, sp. n.

Pallide flava, clytris nigris clavaque antennali fusca; oblonga, modice elongata, convexa, nitida, capite et pronoto sat fortiter punctatis, clypeo angusto, haud emarginato, prothoracis lateribus subtiliter arcuatis, angulis omnibus obtuse rectis, baseos medio late lobato; scutello transverso, laevi; clytris distincte lineato-punctatis, interstitiis parce et subtilissime punctatis, prosterno

fortiter punctato, metasterno minus fortiter; tibiis haud latis, antennis parum gracilibus, clava sat laxè articulata.

Long. 4 mm.; lat. max. 2 mm.

LAOS : between Luang Prabang and Vientiane.

A single specimen.

Although a little smaller, this has the same rather narrow form as *T. alternata*, to which it is closely related, but the lower surface, including the legs, is entirely pale in colour, and the elytra are entirely black. The antennae are rather shorter than in that species, and the club is a little more compact and abrupt. The head and pronotum are a trifle less strongly punctured than in *T. alternata*, and the interstitial punctures of the elytra are less evident. The clypeus is narrow and not emarginate in front.

48. *Tritoma ornata*, sp. n.

Laete fulva, capitis vitta mediana, prothoracis macula antica geminata vel bilobata, elytrisq. nigris, his fascia antemediana multidentata transversa maculaque utrinque apicali triangulari fulvis ornatis, clava antennali (apice excepto) nigra; ovalis, convexissima, nitida, corpore supra ubique sat crebre punctato, clypeo parum brevi, fortiter emarginato, oculis modice prominentibus, pronoti marginibus lateralibus vix arcuatis, angulis omnibus fere rectis, basi anguste lobato; elytris fortiter punctato-striatis; corpore subtus subtiliter, lateribus fortius, punctatis; antennarum articulo tertio quam quarto plus duplo longiori, clava ovali, modice compacta, articulo 9 lato, 11 minuto.

Long. 4—5 mm.; lat. max. 2.5—3 mm.

UPPER MEKONG R. : Ban Nong (Dec.), Pou Bia (Jan.).

This is intermediate between the rather depressed preceding insects and the short and convex species represented by *T. bipustulata* F. It is more elongate than the last, more closely punctured, with more strongly marked elytral striae, and has longer antennae and tibiae, the antennal club being of the same general form but less compact. The last joint of the labial palpus is only a little wider than it is long. The coloration is like that of no other described species. The legs and lower surface are yellow, the head is yellow with a longitudinal median black line, the pronotum is yellow with two oval black spots more or less united occupying the middle of the front margin and extending backwards beyond the middle

of the thorax. The extreme hind margin of the pronotum is also black, as are the scutellum and elytra, the latter being decorated with a transverse orange band before the middle, sometimes interrupted at the suture, and a triangular patch in the posterior angle of each, not quite reaching the margin.

49. *Cyrtomorphus curtus* Gorh.

LAOS: Luang Prabang, Ban Nam Mo, Pou Hai Katoui.

This is also found in the Malay Peninsula and Sumatra. It varies from 6 to 8 mm. in length.

NOTE.—Five species of Erotylidae from Indo-China were enumerated by Gorham under the name "Encaustidae" (Ann. Soc. Ent. France, 1891, p. 399). Two of his identifications are certainly quite wrong (viz., the West African *Tritoma senegalensis* Crotch, and the Ceylonese *Eurestus translucidus* Mots.), and two others I am not able to confirm. As I have not seen the specimens on which the list is based (which are in the collection of M. Ed. Fleutiaux) I have disregarded Gorham's names altogether in the preceding paper.